# FW1175 User's Manual

# (Product Guide)

Version 4.14(Rev.E)

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FlexWATCH®
(주)세연테크 Seyeon Tech Co., Ltd.

**Class A Digital Device (industrial & commercial environment)**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to CE and FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

# FW1175 User's Manual

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### About This Document

This document is prepared for users of FW1175 supplied by Seyeon Tech Co., Ltd. It is assumed that the users are familiar with Microsoft Windows operating systems and Web browsers such as Internet Explorer. It is also assumed that the users are well aware of how to install and use the network equipment such as LAN, Hub, router, and having basic knowledge of network terminologies. If you have any questions regarding network installations, please contact your network equipment vendor or network administrator or Internet service providers.

For updated contents, detailed features and other applications from Seyeon Tech, please refer to the user's manual in CD-ROM provided with the product you purchased, or visit Seyeon Tech's Internet homepage at http://www.flexwatch.com/.

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# 1. Product Overview

## 1.1. FW1175

FlexWATCH® 1175 is a stand-alone device transmitting vdeo from built-in megapixel camera over IP(Internet Protocol) network. FW1175 model is divided into 3 different types: DS, MS and FS.

It can transmit up to 30fps@D1(DS)/1.3M(MS)/2M(FS) over the existing network. You can monitor video of FW1175 through web browser(ie. MS Internet Explorer), if FW1175 is connected to network. FW1175 supports video compression both MJPEG and H.264 simultaneously so that user can choose appropriate video compression for the purpose. For both MJPEG and H.264, FW1175 provides 6 levels of video quality. FW1175 also supports both ONVIF and PSIA.

Built-in SD card slot for full-blown DVR functionality is optional.

**Picture 1 : FW1175**

## 1.2. Key Features

- Standalone device with a built-in web server
- 10M/100M Auto-Sensing Ethernet
- Configuring and controlling through Web browser
- Max 30 fps transmission speed on TCP/IP network
- Effective Bandwidth & Bit-rate Control (VBR/CBR) by H.264
- Supports Dual Streaming in MJPEG and H.264
- 1ch Voice Encoding/1ch Voice Decoding
- Support Dynamic IP network by IPCCTVDNS Server
- Support various PTZ (Pan/Tilt/Zoom) devices
- Support Sensor Input and Digital Output
- Support Transparent Mode
- Built-in 2 way Audio transmission (1ch A-in, 1 A-out)
- Encryption function by user authentication
- Image transmission function via FTP and Email
- Support both ONVIF/PSIA

## 1.3. Technical Specification

| | FW1175-DS | FW1175-MS | FW1175-FS |
|---|---|---|---|
| Hardware | 32bit Embedded CPU<br>NAND Flash 128Mbytes/DDR2: 128Mbytes<br>Linux version 2.6.xx operating system<br>Battery backed up real-time clock | | |
| Image sensor | 1/3" CCD (ICX638,ICX639)<br>Resolution: 560 TV Lines<br>S/N ratio: 52dB or more (AGC OFF, Weight ON)<br>Electronic shutter speed : 1/60(50) ~ 1/120,000 sec<br>Sens-up : AUTO/FIXED/OFF (selectable limit x2 ~ x256)<br>White Balance: ATW/AWC/Manual/Outdoor(1800K~10,500K)/Indoor( 4500K ~8500K) | 1/3" progressive scan MOS<br>Active pixels 1280H x 1024V, 1.31M<br>Effective pixels 1376H x 1070V, 1,47M<br>Pixel size: 3.75 (H) μm × 3.75 (V) μm<br>Color filter Bayer arrangement of primary colors: R, G, B<br>Bit number of internal ADC: 12 bits<br>Parallel output: 54 MHz, 12 bits<br>Output frame rate: 30 fps | 1/2.8" progressive scan CMOS<br>Active pixels 2080H x 1553V, 3.23M<br>Effective pixels 2096H x 1561V, 3.27M<br>Pixel size : 2.5 (H) μm × 2.5 (V) μm<br>Color filter Bayer arrangement of primary colors: R, G, B<br>Bit number of internal ADC: 10/12 bits<br>Parallel output: 37.125 MHz, 10/12 bits<br>Maximum frame rate in all-pixel scan mode: 60 fps |
| Lens | Auto IRIS & Vari-focal<br>2.8 - 10.5 mm F1.2 | Auto IRIS & Vari-focal<br>for Megapixel<br>3.6 - 16.0 mm F1.2 | Auto IRIS & Vari-focal<br>for 2Megapixel<br>2.8 - 10.0 mm F1.2 |
| Minimum illumination | Color: 0.15 Lux (F1.2)<br>B/W: 0.002 Lux (F1.2)<br>(Sens-up: x128) | Color: 0.5 Lux(F1.2)<br>B/W: 0.02 Lux(F1.2) | Color: 2 Lux(F1.2)<br>B/W: 0.01 Lux(F1.2) |
| Video related special functions | Color mode (Coler/Gray)<br>Hue/Saturation/Contrast/Brightness Control | Day & Night (Auto/B&W/Off)<br>Auto White Balance<br>Noise Filter (Off/On)<br>Brightness/Contrast/Sharpness/AGC Gain Control<br>Lens Type (DC/Manual)<br>Shutter (Manual/Auto)<br>Vertical/Horizontal Flip<br>Frequency Control (50/60) | |
| Video compression | MJPEG<br>H.264 | | |
| Video Standards | ONVIF<br>PSIA | | |
| Resolution | 720x480,<br>704x480,<br>352x240,<br>176x112 | 1280x1024,<br>704x480,<br>352x240,<br>176x112 | 1920x1080,<br>1280x720<br>640x352,<br>320x176,<br>160x96 |

| | | | |
|---|---|---|---|
| Frame rate<br>(each channel) | Up to 30/25 fps @4CIF<br>(Other Stream at QCIF) | Up to 30 fps @ 1024p<br>(Other Stream at QCIF) | Up to 30 fps @ 1080p<br>(Other Stream at QCIF) |
| Video Streaming | MJPEG and H.264 Dual Streaming (Simultaneously)<br>Controllable frame rate and bandwidth | | |
| Image setting | Compression levels: 6 (MJPEG, H.264)<br>Color: color, black & white | | |
| Voice | 8 bit PCM (G.711-u-low), Sampling rates 8KHz, Mono Audio<br>1ch in & 1ch out | | |
| LAN interface | 10/100BaseT Ethernet auto sensing<br>IEEE 802.3af Built-in POE (optional)<br>IEEE 802.11b/g Built-in wireless (optional) | | |
| SD card slot | Option | | |
| Alarm I/O Interface | 1 Photo-coupled inputs and 1 Relay output | | |
| Video Output | 1 loop through analog<br>video outputs | - | - |
| Audio Input(MIC) | Input Impedence : 4 KOhm<br>Pantom Power : 3.3 Volt<br>Gain : 20 dB<br>Jack : 3.5mm Mono | Input Impedence : 4 KOhm<br>Pantom Power : 5 Volt<br>Gain : 20 dB<br>Jack : 3.5mm Mono | |
| Audio Output(SPK) | Output Impedence : 130 Ohm<br>Output Power : 50 mWatt<br>Output Voltage : Peek To Peek 1 Volte<br>Jack : 3.5mm Stereo | | |
| Power Over Ethernet | Option | | |
| Serial Interface | COM Port: RS-232,<br>COM ports for console, serial input/output device<br>Max Baudrate: 115,200 bps | | |
| Security features | Multi user level protection for camera access, Alarm I/O | | |
| Advanced Service | Up to 5.6M memory for Pre/Post alarm buffer<br>E-Mail, FTP, IP notification, Alarm Notification to e-mail<br>CGI Call by event or schedule | | |
| Built-in Motion detections | Accuracy: 12x12=144 blocks<br>Motion Sensitivity : -100 ~ 100 : 100 is hypersensitive | | |
| Others | Transmit External data(EX:POS) transfer with Video<br>IP notification by e-mail | | |
| Management | Configurable by serial, web or telnet<br>Remote system update via telnet, FTP OR web browser | | |
| Developer support | Provides HTTP CGI API<br>ActiveX control development kit | | |
| PWR Supply | SMPS<br>Input: 100~240VAC, AC 50/60Hz, 300mA<br>Output: DC 12 Volt, 1A | | |
| PWR Consumption | DC 12Volt Max 600 mA | | |

| | |
|---|---|
| Operating Environment | Temperature : 32°~ 122℉ (0°~ 50℃)<br>Humidity : 20 ~ 80% RH(non-condensing) |
| Miscellaneous | Work with Smart NVR(CMS software)<br>Dynamic IP support through IPCCTVDNS Server |
| Simultaneous users | Live-cast for up to 16 clients |
| Installation, management and maintenance | Installation CD and web-based configuration<br>Firmware upgrades over HTTP, telnet & FTP, firmware available at homepage |
| Video access from Web browser | Video access from Web browser |
| Minimum Web browsing requirements | Pentium 4, 2 GHz, 2GB(RAM) or higher<br>Video Card: 256MB RAM, 1024x768 resolution or higher<br>100Mbps Network Adaptor or faster<br>Windows XP Pro or later<br>Internet Explorer 6.x or later |
| System integration support | Powerful API for software integration available at http://www.flexwatch.com, including Simple Viewer API, FlexWATCH Control SDK, event trigger data in video stream, embedded scripting and access to serial port peripherals over HTTP/TCP<br>User can be installed user program daemon for event notification or sending image<br>Embedded operating system: Linux 2.6 |
| Supported protocols | HTTP, RTP/RTSP, TCP/IP, FTP, Telnet, RARP, PPPoE, SNMP, PAP, CHAP, DHCP, NTP, SMTP client |
| Approvals | KCC<br>FCC : Class A<br>CE : Class A<br>RoHS, IP66 |
| Dimensions (HxWxD) and weight (1lbs = 454g) | 148Ø x 121(H) (in mm)<br>About 0.940kg without power supply<br>1.0kg impact-resident casing<br>Polycarbonate clear dome glass<br>Metal base |

** All specifications are subject to change without prior notice.*

**Table 1 : FW1175 Data Sheet**

## 1.4. FW1175 Packing List

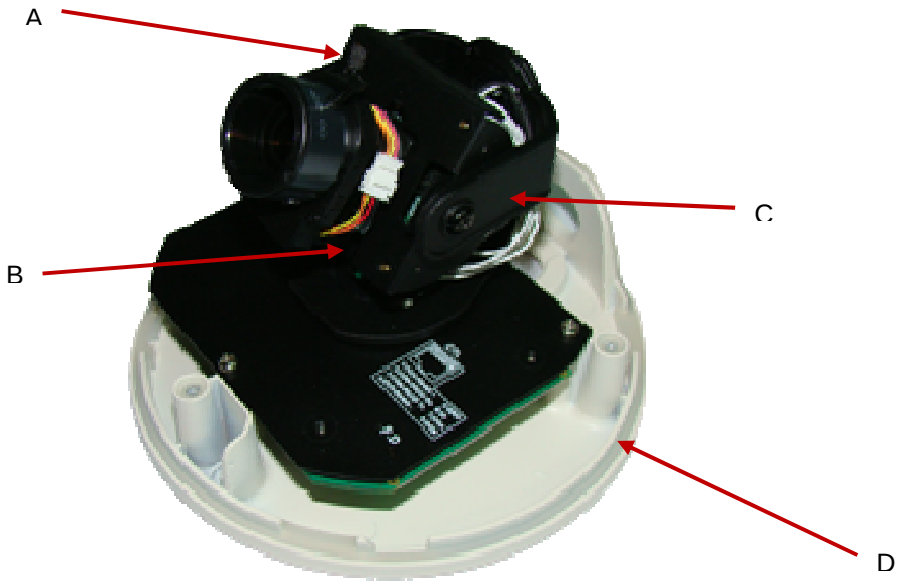
| | | |
|---|---|---|
| FW1175 | 1ea |  |
| Power Supply Unit<br>(Power Cable & SMPS DC12V 1.0A Adapter) | 1ea |  |
| CD (User's Manual, IP Installer and etc) | 1ea |  |

**Table 2 : FW1175 Packing List**

*Note: Please check all the listed items are included in your package. For any missing items, please contact your local distributor.*

# 2. Hardware Description

## 2.1. Front View under Dome Cover




**Picture 2 : Front View**

| | Name | Description |
|---|---|---|
| A | Bolt for positioning module (Up and Down) | Move the position of Module up and down (Fix the position when install) |
| B | Camera Module | Camera module to input Video |
| C | Bolt for positioning module (Right and Left) | Move the position of Module right and left (Fix the position when install) |
| D | Main Body | Mainboard and Camera Module |

**Table 3 : FW1175 Front View**

## 2.1. Rear View under Dome Cover

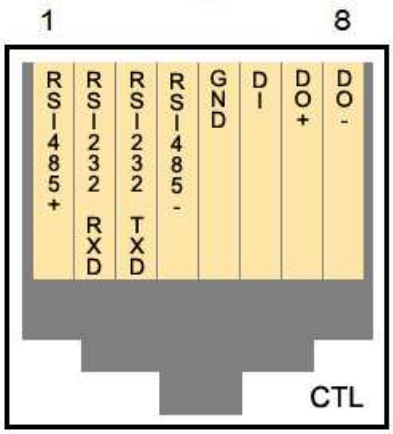

**Picture 3 : FW1175Rear View**

| | Name | Description |
|---|---|---|
| A | LAN | LAN Connector. |
| B | CTL Conn. | CTL Port (RS-485, RS-232, DI, DO) |
| C | Cable Hole | Hole for cable out |
| D | SPEAKER ,V-OUT Conn. | Speaker Port ,Video Output Port |
| E | MIC Conn. | MIC Port |
| F | Power Conn. | Power Connector. |

**Table 4 : FW1175 Rear View**

### 2.1.1. CTL Port Description

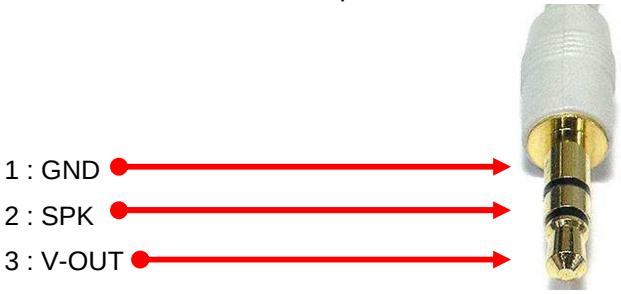
It's RS-232 port for Serial input device, Modem or Console (Hyperterminal.connection). For RS-232 connection, RXD,TXD and GND are used. For connection to PC, RXD and TXD are used. RXD and TXD should be cross to communicate properly




**Picture 4 : CTL Port Description**

### 2.1.2. Speaker V-out Jack Description

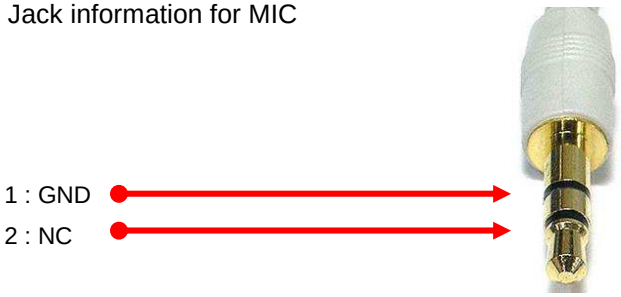
Jack information for Mono Speaker or Video Out Jack.




**Picture 5 : V-out Jack**

### 2.1.3. MIC Jack Description

Jack information for MIC




**Picture 6 : MIC Jack**

# 3. FW1175 Installation and Basic Setup

## 3.1. Before Installation

- Read carefully User's Manual.
- Check User's Network (IP Address, Network Mask and default gateway)
- Secure IP address for FW1175.

## 3.2. Factory Default Settings

The following table shows the factory default condition. Please refer to this when you need to change the values on admin menu.

| | Factory Default |
|---|---|
| Admin ID | root |
| Admin password | root |
| IP address | 10.20.30.40 |
| Network mask | 255.255.255.0 |
| Gateway | 10.20.30.1 |

**Table 5 : Factory Default**

*Note: Factory default Admin ID and Password are all lower case letters. You can change the password with Capital letters.*

## 3.3. Installing FW1175

Following steps are the physical installation process for FW1175.

1. Fix the FW1175 in place
2. Connect the FW1175 to the Internet cable through the LAN port.
3. Connect the power supply of FW1175.

After that, you need to follow the steps below.

- Network Configuration: Refer to "IP Installer User's Manual"
- Camera Configuration: Refer to "FlexWATCH Admin Menu User's Manual"
- Service Configuration: Refer to "FlexWATCH Admin Menu User's Manual"